IN THE CLAIMS

Please amend the claims as follows:

1.-82. (Cancelled)

83. (Currently Amended) A method of detecting the presence or measuring the quantity of a target analyte in a sample ~~reagent~~, comprising:

positioning the sample ~~reagent~~ on a sensor ~~biosensor~~, the sensor ~~biosensor~~ including ~~electrically conductive electrodes positioned~~ a working electrode, a reference electrode and a counter electrode on a substrate, ~~each of the electrodes~~ the reference electrode consisting of a single layer of an electrically conductive material;

conducting an analysis of the sample that includes controlling a potential difference between the reference electrode and the working electrode while measuring a current flowing through the working electrode, wherein

the potential is controlled so as to cause a redox reaction between a component in the sample and the working electrode, and

the current through the working electrode is balanced by a current through the counter electrode; and

employing the measured current to determine the presence or quantity of a target analyte in the sample ~~two of the electrodes; and~~

~~measuring an electrical signal from the biosensor so as to determine the presence and/or quantity of the target analyte in the sample reagent~~.

84. (Currently amended) The method of claim 83, wherein the sensor ~~electrochemical biosensor~~ includes an adhesive underneath each of the electrodes, the adhesive allowing for better adhesion of each of the electrodes to the substrate.

85. (Currently amended) The method of claim 83, wherein the sample ~~reagent~~ is a biological fluid containing macromolecules.

86. (Currently amended) The method of claim 83, wherein the sample ~~reagent~~ is a biological fluid containing ionic molecules or atoms.

87. (Previously presented) The method of claim 83, wherein the substrate is selected from the group consisting of silicon, gallium arsenide, plastic and glass.

88. (Previously presented) The method of claim 83, wherein the substrate comprises a material made out of silicon.

89. (Previously presented) The method of claim 83, wherein the electrically conductive material is selected from the group consisting of gold, aluminum, chromium, copper, platinum, titanium, nickel and titanium.

90. (Previously presented) The method of claim 83, wherein the electrically conductive material is gold.

91. (Previously presented) The method of claim 84, wherein the adhesive is selected from the group of consisting of chromium, titanium, and glue.

92. (Previously presented) The method of claim 84, wherein the adhesive includes chromium.

93. (Previously presented) The method of claim 83, wherein the substrate further includes a well structure containing at least one of the electrodes.

94. (Previously presented) The method of claim 83, wherein each of the electrically conductive electrodes consists of a single layer of gold.

95. (Currently Amended) The method of claim 83, ~~wherein determining from the signal output the presence and/or quantity of the target analyte in the reagent further comprises~~ further comprising: calibrating the sensor ~~electrochemical biosensor~~ with a first calibrating solution that contains a known amount of ~~the~~a target analyte to be detected and a second calibrating solution

that contains an undetectable amount of the target analyte to be detected~~; obtaining a reference signal output; and comparing the reference signal with the measured signal to determine the presence and/or quantity of the molecules in the sample reagent~~.

96. (Canceled).

97. (Canceled).

98. (Currently Amended) The method of claim 83, wherein a surface on at least one of the electrodes is ~~surface~~ modified for anchoring molecules on the surface.

99. (Previously presented) The method of claim 83, wherein the electrodes are in contact with the substrate.

100. (Previously presented) The method of claim 83, wherein the electrically conductive material associated with each electrode extends from each electrode to an electrical pad positioned on the substrate.

101. (Previously presented) The method of claim 83, wherein each of the electrodes is constructed of the same material.

102. (Currently Amended) The method of claim 91, wherein ~~each of the electrodes has a different shape~~ the reference electrode and the counter electrode each have a shape that is different from a shape of the working electrode.

103. (Currently amended) The method of claim 83, wherein the sample ~~reagent~~ is a liquid.

104. (Currrently amended) The method of claim 83, wherein positioning the sample on the sensor ~~contacting the microfabricated electrochemical biosensor with the sample reagent~~ includes forming a drop of the sample over the electrodes.

105.-107. (Canceled)

108. (Currently Amended). The method of claim 83, wherein the potential difference between the ~~two electrodes~~ working electrode and the reference electrode is controlled by application of a current through the counter electrode~~a third one of the electrodes~~.

109.-111. (Canceled).

112. (Amended) The method of claim 83, wherein the sensor consists of the working electrode, counter electrode and reference electrode ~~electrodes~~ positioned on the substrate.

113. (Previously presented) The method of claim 83, wherein the sensor occupies an area of 160 μm^2 to 25 mm^2.

114. (New) The method of claim 83, wherein the analysis is a cyclic voltammetry analysis.

115. (New) The method of claim 83, wherein the analysis is an amperometric analysis.

116. (New) The method of claim 83, wherein controlling the potential difference between the working electrode and the reference electrode includes sweeping the potential difference between the working electrode and the reference electrode across a range of values.

117. (New) The method of claim 83, wherein the analysis includes measuring the current between the counter electrode and the working electrode while sweeping the potential difference between the working electrode and the reference electrode across a range of values.

118. (New) The method of claim 83, wherein the reference electrode, the working electrode and the counter electrode each consist of a single layer of an electrically conducting material.

119. (New) The method of claim 83, wherein a self-assembly monolayer is positioned on at least one of the electrodes.

120. (New) The method of claim 83, wherein a self-assembly monolayer is positioned on the working electrode.

121. (New) The method of claim 83, wherein the reference electrode is arranged about the perimeter of the working electrode such that a portion of the working electrode is positioned between different regions of the reference electrode.

122. (New) The method of claim 83, wherein the counter electrode is arranged about the perimeter of the working electrode such that a portion of the working electrode is positioned between different regions of the reference electrode.

123. (New) The method of claim 83, further comprising:

employing the potential to determine the presence or quantity of the target analyte in the sample.